A NEW SPECIES OF COLLEMBOLA FROM UTAH (COLLEMBOLA: KATIANNIDAE)[1]

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ABSTRACT: A new species of Collembola, *Sminthurinus* (*Polykatianna*) *utahensis* is described from Logan County, Utah. The species was taken from maple (*Acer* sp.) litter using the Tullgren extraction method.

Recently, through the kind cooperation of Howard V. Weems, Jr., Curator of the Florida State Collection of Arthropods, I have been able to examine a large collection of Collembola from Utah. Specimens, described here as a new species, were taken in the field by George F. Knowlton, Utah State University. The classification of higher catagories used in this report follows Betsch (1980); generic level follows Richards (1968) and Christiansen and Bellinger (1981).

Sminthurinus (Polykatianna) utahensis n. sp.

COLOR DESCRIPTION

Antenna light purple, becoming darker distally. Head with lower frons dusted with light purple. Black maculae occur between antennal bases and interocular area, otherwise head is white. Prothoracic region white, dark purple pigment occurs over major portion of body both dorsally and laterally. Pattern forms a large white spot laterally, that opens downwards. Appendages white. (Figs. 1 & 2).

MORPHOLOGICAL DESCRIPTION

HEAD: eyes 8 + 8 on black patches, ocelli C and D at least 1/2 diameter of others (Fig. 3); mean antennal ratio 1:2:2.5:6.25; ANT I with 4 dorsal anterior and 1 ventral setae (Fig. 4); ANT II not remarkable (Fig. 5); ANT III with subapical sense rods lying in shallow depressions, lateral sensory papilla simple (Fig. 6); ANT IV divided into 9 subsegments (Fig. 7), with median apical bulb (Fig. 8); frons with 1 + 1 fovea and 1 + 1 oval organs below antennal bases (Fig. 9). FORELEG: coxa with 1 seta; trochanter with 3 anterior and 1 posterior setae, femur with 1 short, distal posterior seat (arrow); tibiotarsus with 10 clavate tenent hairs (Fig. 10); pretarsus with anterior and posterior setulae; unguis lanceolate, with 2 weak inner teeth; unguiculus with distinct inner corner tooth and short subapical needle (Fig. 13). MESOLEG: coxa with 3 setae; trochanter with 3 anterior and 2 posterior setae, D_2 modified into a trochanteral organ (arrow); femur with 1 short, distal posterior seta (arrow); tibiotarsus with 1 "epine accolee" on posterior surface (arrow) and 10 clavate tenent hairs (Fig. 11); pretarsus with anterior and posterior setulae; unguis lanceolate, with 2 weak inner teeth; unguiculus with distinct inner corner tooth and short subapical needle (Fig. 14).

METALEG: coxa with 3 setae; trochanter with 3 anterior and 2 posterior setae, D_2 modified

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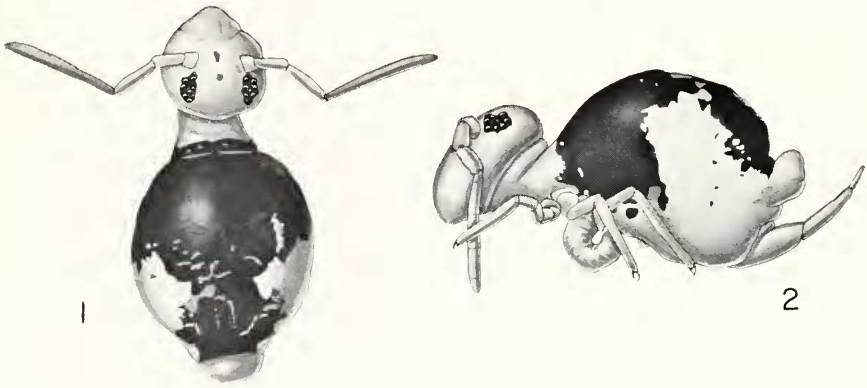
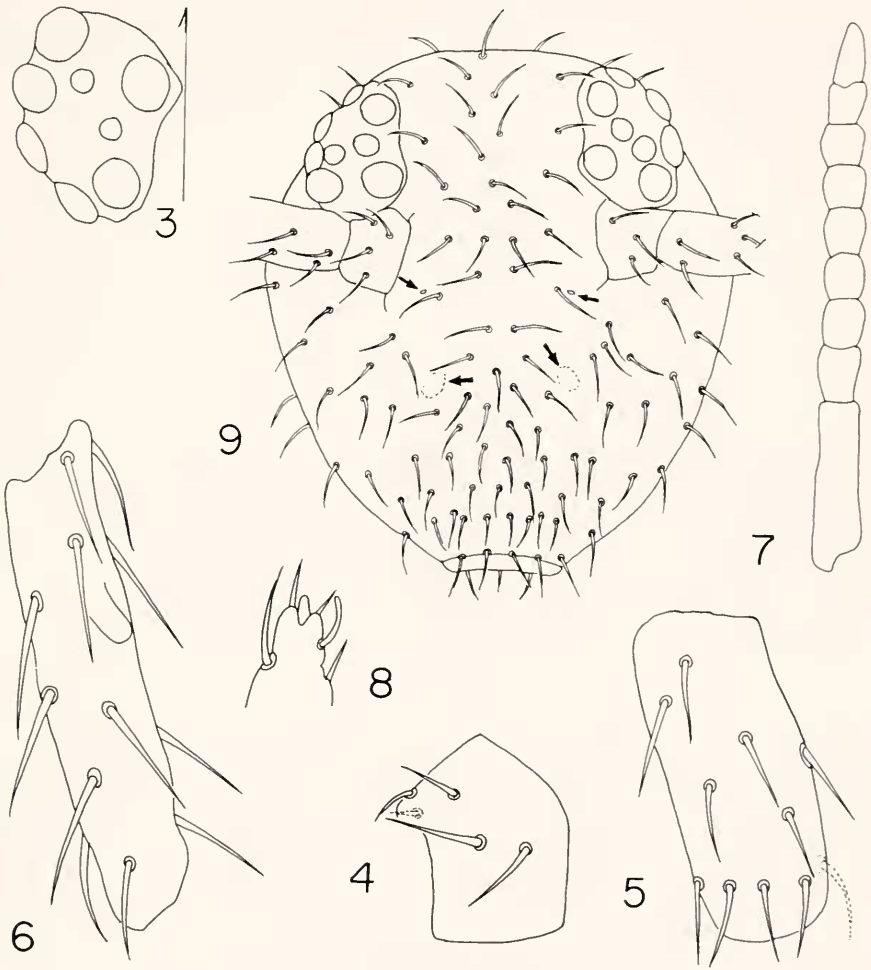
into trochanteral organ (arrow); femur with 2 posterior setulae; tibiotarsus lacks "epine accolee" on posterior surface with 10 clavate tenent hairs (Fig. 12); pretarsus with anterior and posterior setulae; unguis lanceolate, with 2 weak inner teeth, unguiculus with distinct inner corner tooth and short subapical needle (Fig. 15). GREAT ABDOMEN: collophore with 2 + 2 distal anterior setae (Fig. 16), sacs warty; retinaculum with 3 teeth and 1 basal horn, corpus with 2 setae (Fig. 17); manubrium with 7 + 7 ventral setae (Fig. 18); dens with 1 ventral subapical seta (Fig. 19) and dorsally with L_1, -L_2-L_3-L_5, ID_1 -ID_7 present (Fig. 20); mucro with outer edge smooth, inner serrate (Fig. 21). LESSER ABDOMEN: simple supraanal seta, anal papilla absent, subanal appandage palmate (Fig. 22); bothriotrix D with low truncated cone, seta short and stiff (Fig. 23); anal setae of ♀ not basally expanded (Fig. 24). Body setae short, slightly curving, sparsely distributed over abdomen. Length up to 0.60 mm.

DIAGNOSIS

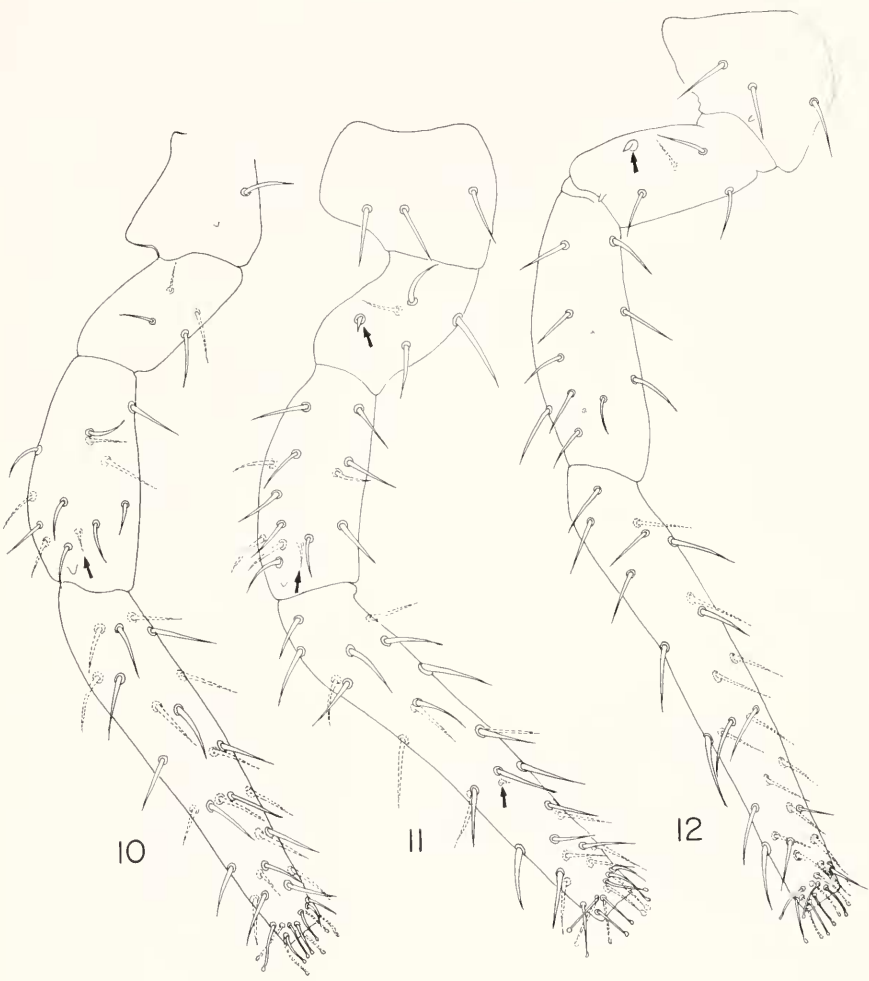
Sminthurinus (*Polykatianna*) *utahensis* keys out closest to *Sminthurinus* (*Sminthurinus*) *conchyliatus* Snider in Christiansen & Bellinger (1981). However, the two species are easily separated by subgeneric morphological characteristics. *S. utahensis* has antennal segment IV subsegmented, median supraanal seta simple and papilla of antennal segment III simple. Of the known members of the subgenus *Polykatianna*, *S. utahensis* comes closest to *S.* (*Polykatianna*) *polygonius* Snider. Not



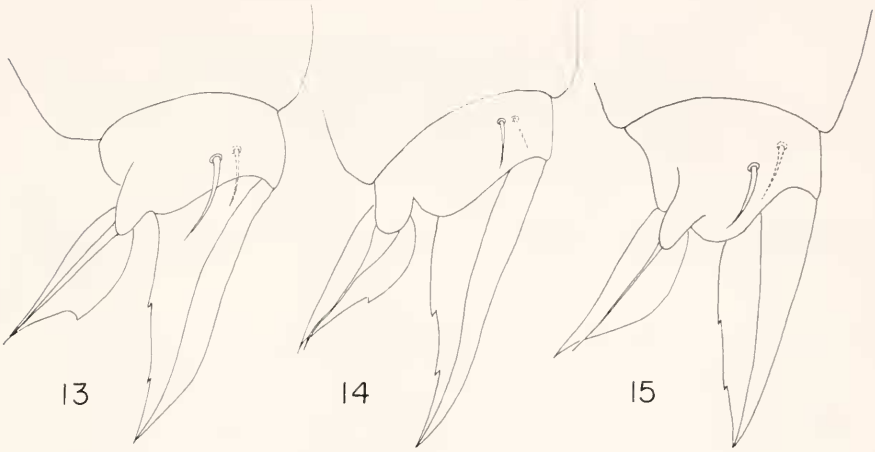
Figs. 1. *S.* (*Polykatianna*) *utahensis* n. sp., dorsal habitus. 2. lateral habitus.



Figs. 3. left eyepatch. 4. ANT I. 5. ANT II. 6. ANT III showing lateral sensory papilla. 7. ANT IV. 8. ANT IV, apical segment. 9. frontal view of head, arrows indicate oval organs and fovea.



Figs. 10. foreleg. 11. mesoleg. 12. metaleg.



Figs. 13. foreclaw. 14. mesoclaw. 15. metaclaw.

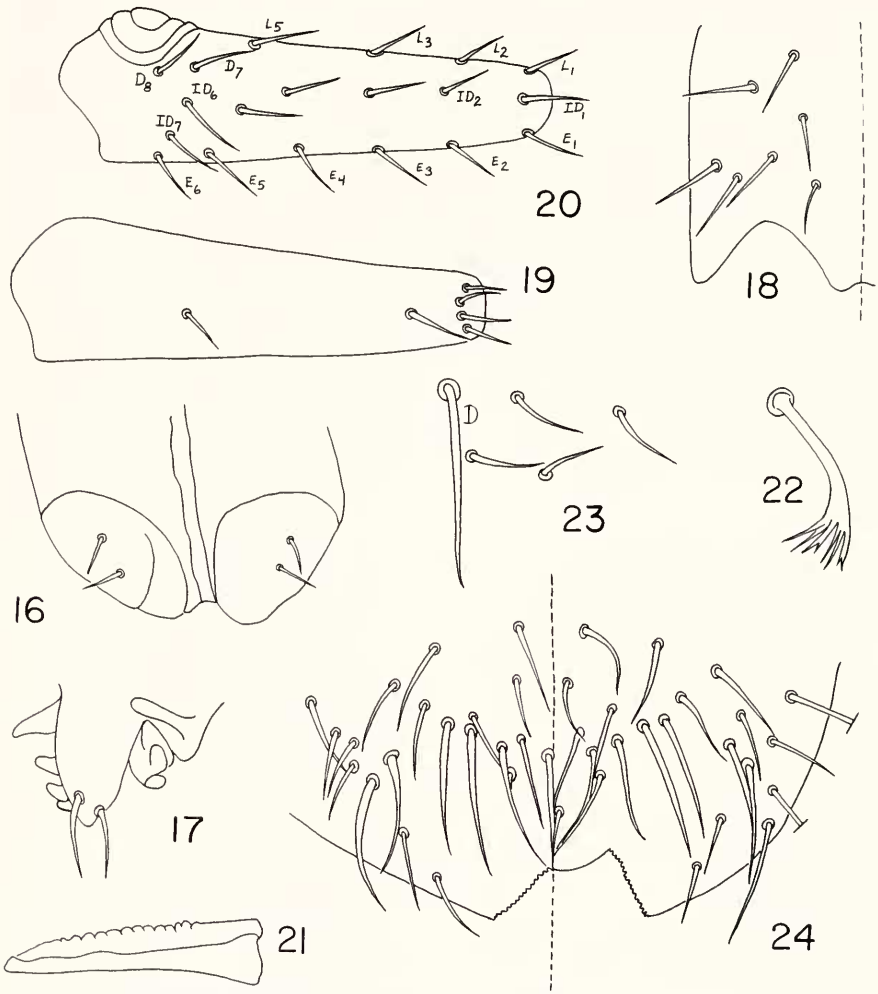
only do they differ in color pattern, but *S. polygonius* lacks an apical bulb on antennal segment IV and has 3 ventral subapical setae on the dens. In Stach (1956) *S. utahensis* keys out to *Sminthurinus bimaculatus* (Axelson). It differs from that species by having 10 clavate tenent hairs, rather than 4-5; with only the outer margin of the mucro serrate instead of both inner and outer margins serrate; and the papilla of antennal segment III of *S. bimaculatus* is divided into 4 parts, while *S. utahensis* has a simple papilla.

TYPES

Holotype (female) and Allotype (male) preserved in ethanol, 50 paratypes in ethanol, and five paratypes mounted on slides in polyvinyl alcohol. Holotype, allotype and 40 paratypes deposited in the Florida State Collection of Arthropods at Gainesville, Florida; 10 paratypes and 5 mounted slides deposited in the Entomology Museum, Department of Entomology, Michigan State University in East Lansing, Michigan. All specimens were collected in Utah, Cache County, Logan Canyon, Spring Hollow, June 14, 1984, maple litter (*Acer* sp.) by George F. Knowlton.

ACKNOWLEDGMENTS

Thanks are extended to Howard V. Weems, Jr. curator of the Florida State Collection of Arthropods for the loan of specimens.



Figs. 16. collophore, 17. retinaculum, left view. 18. manubrium. 19. dens, ventral aspect. 20. dens, dorsal aspect. 21. mucro, lateral view. 22. subanal appendage. 23. bothriotrix D. 24. anal setae of ♀, dorsal aspect.

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